CLAIM AMENDMENT:

1. **(Original)** A breakaway interface between a radiology accounting and billing information system having one-to-one correspondence between individual radiological studies and individual work orders, a picture archive and communication system having one-to-one correspondence between individual radiological studies and individual work orders, and a radiological imaging machine that produces multiple studies from a single work order, comprising:

means for receiving an image sequence from said radiological imaging machine;

means for dividing said image sequence into separate, anatomically associated image sequences;

means for matching said anatomically associated images with corresponding individual work orders; and

means for transmitting said matched anatomically associated image sequences and said corresponding individual work orders to said picture archive and communication system.

2. **(Canceled)**

3. **(Canceled)**

4. **(Canceled)**

5. **(Currently Amended)** The breakaway interface of ~~claim 1~~ claim 32 wherein said ~~dividing means~~ automated electronic image analysis further comprises ~~a means for performing~~ histogram analysis.

6. **(Currently Amended)**.The breakaway interface of ~~claim 1~~ claim 32 wherein said ~~dividing means~~ automated electronic image analysis further comprises ~~a means for executing~~ peak finding techniques.

7. **(Currently Amended)** The breakaway interface of ~~claim 1~~ claim 32 wherein said ~~dividing means~~ automated electronic image analysis further comprises ~~a means for performing~~ moments of order analysis.

8. **(Currently Amended)** The breakaway interface of ~~claim 1~~ claim 32 wherein said ~~dividing means~~ automated electronic image analysis further comprises ~~a means for~~ evaluating information from at least one previous analysis.

9. **(Currently Amended)** The breakaway interface of ~~claim 1~~ claim 32 wherein said ~~dividing means~~ automated electronic image analysis further comprises ~~a means for~~ identifying and evaluating series information.

10. **(Currently Amended)** A method of separating a single radiological image sequence

comprising a plurality of individual radiological images into a plurality of sequences and associating said plurality of sequences with a plurality of associated studies and work orders, comprising the steps of:

receiving said single radiological image sequence in electronic form;

analyzing a one of said individual radiological images within said single radiological image sequence using automated electronic image analysis to determine an associated anatomical region; and

assigning said one of said individual radiological images to an appropriate at least one of said plurality of associated studies and work orders.

11. **(Original)** The method of separating a single radiological image sequence of claim 10 wherein said single radiological image sequence is received in digital electronic form.

12. **(Original)** The method of separating a single radiological image sequence of claim 10 wherein said analyzing comprises histogram analysis.

13. **(Original)** The method of separating a single radiological image sequence of claim 10 wherein said analyzing comprises moments of order analysis.

14. **(Original)** The method of separating a single radiological image sequence of claim 10 wherein said analyzing comprises peak finding techniques.

15. **(Original)** The method of separating a single radiological image sequence of claim 10 wherein said analyzing comprises evaluating information from previous analysis steps.

16. **(Original)** The method of separating a single radiological image sequence of claim 10 wherein said analyzing comprises evaluating series information to distinguish multiple procedures.

17. **(Original)** The method of separating a single radiological image sequence of claim 10 further comprising the step of recognizing compound work orders subsequent to said receiving step, and, responsive thereto, electing whether to perform said analyzing step.

18. **(Currently Amended)** A method of processing radiological orders using a radiological information system containing radiological examination orders and associated information, a picture archive and communication system, and an imaging apparatus capable of producing an image sequence having a plurality of individual images therein, including interfacing said radiological information system, said picture archive and communication system and said imaging apparatus in an effective and efficient manner, comprising the steps of:

receiving said radiological examination orders;

affiliating said radiological orders using said imaging apparatus that are each assigned to a common patient into a super order;

conveying said radiological examination orders to said imaging apparatus for

imaging;

generating image sequences having at least one individual radiological image;

delivering image sequences corresponding to ~~said~~ unaffiliated radiological examination orders to a storage system;

analyzing said at least one individual radiological image within said image sequences corresponding to said super orders using automated electronic image analysis to determine ~~an~~ associated ones of said multiples of said radiological orders ~~study~~;

assigning said at least one individual radiological image to an appropriate one of said plurality of associated studies and work orders based upon said analyzing and determining step; and

transmitting said assigned at least one individual radiological image and said appropriate one of said plurality of associated studies and work orders to said storage system.

19. **(Currently Amended)** The method of processing radiological orders of claim 18 wherein said step of affiliating further ~~comprising~~ comprises the steps of:

distinguishing said radiological examination orders that are unaffiliated with other radiological examination orders from radiological examination orders that are affiliated with other radiological examination orders; and

assembling affiliated radiological examination orders into a super order

responsive to said distinguishing.

20. **(Original)** The method of processing radiological orders of claim 19 wherein:

said conveying step further comprising conveying said unaffiliated radiological examination orders and said super orders to said imaging apparatus for imaging responsive to said distinguishing and said assembling steps; and

said at least one individual radiological image is generated corresponding to said unaffiliated radiological examination orders and said super orders.

21. **(Original)** The method of processing radiological orders of claim 19 wherein

said radiological examination orders are received from said radiological information system;

said image sequences and said unaffiliated radiological examination orders are delivered to said picture archive and communication system; and

said at least one individual radiological image and said appropriate one of said plurality of associated studies and work orders are transmitted to said picture archive and communication system.

22. **(Original)** The method of processing radiological orders of claim 18 wherein said analyzing step further comprises histogram analysis.

23. **(Original)** The method of processing radiological orders of claim 18 wherein said analyzing step further comprises moments of order analysis.

24. **(Original)** The method of processing radiological orders of claim 18 wherein said analyzing step further comprises peak finding techniques.

25. **(Original)** The method of processing radiological orders of claim 18 wherein said analyzing step further comprises analysis of information from at least one previous analysis step.

26. **(Original)** The method of processing radiological orders of claim 18 wherein said analyzing step further comprises evaluating series information to distinguish multiple procedures.

27. **(Original)** The method of processing radiological orders of claim 18 wherein said step of determining an associated region further comprises determining an associated anatomical region.

28. **(Currently Amended)** In combination with medical imaging equipment normally operating independently of a stand-alone radiological information system, a breakaway interface disposed between the radiological information system and the medical imaging equipment, said breakaway interface affiliating multiple studies into a single super work order to thereby ~~facilitating~~ facilitate conventional use of the medical imaging equipment for multi-anatomical or multi-procedural studies for generating a series of anatomical images under a single work order, said breakaway interface further electronically analyzing said multi-anatomical or

multi-procedural studies produced under said single super work order, and, responsive to said electronically analyzing, ~~and for simultaneously~~ producing respective individual work orders which are matched to corresponding anatomical images, and which are inputted into the radiological information system for management control, tracking, accounting and/or billing purposes.

29. **(Original)** The combination of claim 28, further including a picture archive and communication system (PACS) and means for transmitting individual work orders and the anatomical images into the PACS.

30. **(New)** The breakaway interface of claim 1, further comprising a means for affiliating said individual work orders using said radiological imaging machine that are each assigned to a common patient into a super order.

31. **(New)** The breakaway interface of claim 30 wherein said means for affiliating further comprises:

a means for distinguishing said individual work orders that are unaffiliated with others of said individual work orders from individual work orders that are affiliated with others of said individual work orders; and

a means for assembling affiliated individual work orders into a super order responsive to said distinguishing.

32. **(New)** The breakaway interface of claim 1, wherein said means for dividing said image sequence into separate, anatomically associated image sequences further comprises automated electronic image analysis to identify said separate, anatomically associated image sequences.